BUSINESS REPORTING: FINANCIAL ANALYSTS' EXPECTATIONS FOR MANAGEMENT DISCLOSURES

Clay Macfarquhar (*Masters student, Massey University*)

Stuart Tooley (*Queensland University of Technology*)

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Corresponding author: Stuart Tooley
Postal: School of Accountancy, Queensland University of Technology, GPO 2434, Brisbane, QLD 4001, Australia.
Telephone: +61 7 313 86845
Fax: +61 7 313 1812
Email: stuart.tooley@qut.edu.au

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Abstract

It is to be expected that managers will provide sufficient disclosure to enable informed assessments of firm performance and firm value. Through an investigation of the performance indicators used and/or desired by Australian and New Zealand financial analysts, this study identifies a state of continuing information asymmetry. The empirical results indicate that key performance drivers are under reported; especially in regard to measures of product quality and customer satisfaction, product and process innovation, and the competitive environment. Managers need to take cognisance of the importance for disclosure of non-financial operational-type information that focus on factors that create longer term value to complement the traditional reporting.

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1. Introduction

Traditionally, business reporting has been concerned with predominately financial measures of corporate performance. For investors who are primarily concerned with 'risk and return', the information presented in the audited financial statements has sufficed for the purpose of estimating the cash flow projections that underpin market valuation (Arnott 2005). However and particularly with the recent emergence of the so called 'new economy', it has become widely acknowledged that investors, and other information users, demand information beyond that provided under current financial reporting. Increasingly, investors are looking for more non-financial operational-type information to complement the financial reporting (e.g., American Accounting Association 2002; Eccles, Herz, Keegan and Phillips 2001; Ittner and Larcker 1998; 2003; Ittner, Larcker and Rajan 1997; Strives, Covin, Hall and Smalt 1998; Upton 2001). As found by a Special Committee of the American Institute of Certified Public Accountants (1994, p.5), business reporting must "focus more on factors that create longer term value, including non-financial measures indicating how key processes are performing" and must "better align information reported externally with the information reported to senior management to manage the business."

Studies have found that the disclosure of additional, voluntary, information over and above that required by accounting regulation, has an impact on the capital market assessment of corporate value (e.g., Bartov and Bodnar 1996; Gelb and Zarowin 2000; Healy, Hutton and Palepu 1999; Welker 1995). Accordingly, it is important for reporting entities to identify and provide the broader range of disclosures, which provide investors and other users, with greater insight into the capacity of the business to grow, adapt and change, thus enabling a more informed determination of entity performance, both retrospective and prospective. This forms the underlying premise of the current study that managers will provide a sufficient

array of performance-related data to enable informed assessment of firm success. Disclosure of such information might be made within the regulated financial reports, as well as via other media such as press releases, investor websites, presentations to analysts, and other corporate reports. The study reported in this paper is concerned with the adequacy of such business reporting.

As argued by many professional and regulatory authorities, the scope of business reporting disclosure should be determined according to the needs of current and potential users whose information requirements are the most comprehensive (e.g., Financial Accounting Standards Board 1978; International Accounting Standards Board 2001). Financial analysts, as one such user group, are identified as being knowledgeable and influential in the assessment of corporate valuation and use both financial and non-financial measures to evaluate the long term performance of companies (Dempsey, Gatti, Grinnell and Cats-Baril 1997; Healy and Palepu 2000; Previts, Bricker, Robinson and Young 1994). Indeed, studies suggest that managers are concerned about meeting or exceeding analysts' expectations (e.g., Bartov, Givoly and Hayn 2002; Lopez and Rees 2002). Arguably, therefore, managers would be better able to respond to analysts' concerns if they had a clearer insight into the nature of the information analysts consider being important.

The underlying objective of this paper is to examine whether an 'information gap' exists between what is sought and what is provided in respect of financial and non-financial measures financial analysts consider important in their assessment of company performance. To achieve this objective three broad research questions underpin this study and provide the prime areas of empirical focus: (1) what measures of performance are considered by financial analysts to be relevant in the current decision making environment? (2) how readily available

or accessible are these indicators of firm performance? (3) to what extent is there a critical information gap between a measure's relevance and its accessibility?

The remainder of this paper proceeds as follows. In the second section, we outline the theoretical framework that underpins and guides our research. We describe the research design in section three and the findings are presented and discussed in the fourth section. Finally, some conclusions are drawn.

2. Theoretical Framework

Reporting, within an accounting context, is primarily concerned with the gathering of data, moulding it into a particular presentation format and dispatching it into the substantial environment. Such a broad reporting function leads to the issues of what to report, to whom to report, and in what form to report. Conceptually, three reporting paradigms have been advanced to provide guidance and theoretical solutions to these issues, namely, stewardship, public accountability, and decision usefulness (Coy and Dixon 2004). Within the stewardship paradigm and in its basic form, the reporting function is a key element of an agency relationship through which the agent (manager) is able to demonstrate to the principal (owner) that the resources entrusted have been used in a proper manner. The public accountability paradigm recognises a wider stakeholder group interest in the social, political and economic activities and affairs of the reporting entity (Coy, Fisher and Gordon 2001). Motivated by neo-classical economic considerations, the decision usefulness paradigm emerged in about the 1970s and promoted a "fundamental change in attitude toward the purposes of financial statements" (Storey and Storey 1998, p.71) whereby the output of the reporting function is to aid, predominately, investors, creditors and other suppliers of capital (both actual and potential) in their decision making. The decision usefulness approach assumes that the

reporting of ‘useful’ accounting information will facilitate rational economic decisions enabling more efficient allocation of resources (FASB 1980). The study reported in this paper is concerned with the informational requirements of one group of stakeholders, namely, financial analysts, and accordingly is aligned with the decision usefulness paradigm.

The effective functioning of the capital markets depends critically on the effectiveness of the information flows and communication processes between the firm and various stakeholders such as securities analysts and shareholders (AICPA 1994). However, managers often hold privileged information about their firm’s operating performance and its financing and investment opportunities for suppliers of capital. As a consequence, inadequate disclosure may lead to diminished levels of market efficiency including the misvaluation of the firm. In a survey conducted by Financial Executives International (Graham 1999), two-thirds of respondent company executives suggested that their companies’ shares were undervalued, while three percent of respondents thought their companies’ shares were overvalued. A similar view was found by Graham and Campbell (2002) in their survey of senior management. As such, it is generally recognised that information asymmetry is a problem that can affect the efficient allocation of resources in an economy. Voluntary disclosure is seen as an important means of mitigating the effects of information asymmetry whereby managers disclose information so that investors can make informed rational economic decisions about the allocation of their resources. The efficiency of capital markets is therefore reliant on corporate disclosures mandated by regulation and the voluntary disclosure of other information of interest to users. Accordingly, it is beholden on management not only to make decisions that will ultimately determine the success of the firm, but also to ensure that the market is sufficiently informed as to the ‘true’ value of the firm (Bartov and Bodnar 1996; PriceWaterhouseCoopers 2002). Studies have found that the disclosure of information over

and above that which is mandated has benefits in the capital markets. For example, Lang and Lundholm (1996) found that firms that disclosed more rather than less information have a larger analyst following and more accurate analyst earnings forecast. In their study, Healy et al. (1999) found a significant increase in share price that was associated with increases in voluntary disclosure.

There is an extensive body of published research that examines the relation between accounting and other information disclosures and the capital markets (full consideration of this literature is beyond the scope of the current study and readers are referred to, for example, Kothari (2001) for a comprehensive review of capital markets research). An important assumption of capital markets research is that if particular information leads to a share price change (positive or negative), then that information was relevant and useful to the investor's decision making process. Thus, if markets are efficient, then investors and their advisers will use information from an array of sources to inform their decision making.

Firms communicate with external users through different media. A number of studies have examined the information sources used by capital market participants, including financial analysts (e.g., Arnold and Moizer 1984; Lee and Tweedie 1981; Pike, Meerjanssen and Chadwick 1993). Graham, Cannice and Sayre (2002) found that financial analysts primarily rely on firms' income statements, balance sheets and cash flow statements in assessing firms' financial performance and position. Notably, Graham et al. found that direct contact with the company management and management discussion and analysis were valuable sources of information for analysts (see also Ho and Wong 2004). Although further consideration of the extent to which financial analysts use various sources of information is beyond the scope of the current study, prior research findings, in general, indicate that analysts are increasingly

looking toward the firm itself as the most important source of information (Barker 1998). It is important, therefore, for managers to be cognisant of the information that analysts' consider relevant to their assessment of firm performance.

Arguably, the extent to which information can be of practical consequence in the decision making process is largely dependent on the 'relevance' (or usefulness) of the information to the kinds of decision making being undertaken. Information is considered relevant when it "influences the economic decisions of users by helping them evaluate past, present or future events or [when they are] confirming or correcting their past evaluation" (IASB 2001). Consequently, decision makers, who must rely on management disclosures (either by way of regulation or voluntary disclosure), need to receive, or have access to, all relevant information and which extend beyond the traditional, predominately financial, indicators or performance. In an international study of board members and senior executives, Deloitte (2004, p.7) found that:

> *Strikingly, 92% of respondents agreed that financial indicators alone cannot adequately capture their companies' strengths and weaknesses. Although financial measurements received a high rating from survey respondents in helping the board and the CEO make short-term decisions and in formulating strategy, these data are considerably less helpful in making mid- and long-term decisions and in achieving what respondents consider an appropriate valuation in the capital markets.*

Although there is an increasingly held view that financial statements themselves do not provide sufficient information to enable users to make economic decisions (International Accounting Standards Board 2005), this does raise the question as to the scope of extended business reporting. In their study of US financial analysts, Dempsey et al. (1997) concluded

that the range of indicators used to assess long-term firm performance extends well beyond the traditional financial measures associated with a mechanistic approach to the valuation of the firm. They found that while financial measures continue to be important, increased interest is being given to a broad range of non-financial information that make up the bulk of the 'balanced scorecard' approach to internal performance assessments. In a Hong Kong study, Ho and Wong (2004, p.69) found that while investment analysts viewed annual reports as having high information value, additional disclosures in the form of management discussions of factors affecting future financial results, future prospects of the company, main product market share, acquisition and disposal activities and local business review would provide a more comprehensive business reporting. Arguably, the importance to financial analysts of a broad cross-section of financial and non-financial measures indicates a desire, at least by analysts, for a more balanced approach to business reporting.

Consistent with the decision-usefulness paradigm, which maintains that the information supplied by a reporting entity should be primarily addressed to the specific informational requirements of particular users as determined by their own decision making, we subscribe to the view that the informational requirements of users can be determined only through research that enquires of specific users what information they want. That is, we adopt a decision maker's perspective (Bebbington, Gray and Laughlin 2001) in our investigation of whether or not the informational needs of financial analysts are being satisfied by current reporting practices.

3. Research Design

Relevant data for this research were obtained by means of a questionnaire survey that allows financial analyst respondents to identify the relevance of measures of performance in their

current decision making and the perceived availability of those measures. The first draft of the questionnaire drew on aspects of the research instrument developed by Dempsey et al. (1997) and was subsequently modified to address the specific context of the current research. Dempsey et al. investigated the use of strategic performance variables as leading indicators in US-based financial analyst forecasts; the current study is located in the Australian/New Zealand geographical context. The Dempsey et al. research instrument incorporated 63 measures that were identified as being important in assessing firm long-term performance. To ensure that the Dempsey et al. elements were both relevant and complete within the geographical context of the current study, a survey review group consisting of five analysts was established. The survey review group was provided with a list of identified performance measures and a copy of the draft questionnaire. The group proposed a further 17 relevant measures for inclusion in the survey and, therefore, a total of 80 measures are referred to in the current study. The base set of performance measures used in this study is listed in Appendix I. The measures are presented in eight categories, which is consistent with Dempsey et al. (1997).

The sample of financial analysts was drawn from membership of the Chartered Financial Analyst Society of New Zealand and the Chartered Financial Analyst Society of Melbourne, Australia. Both societies are affiliated members of the Chartered Financial Analysts Institute. The combined membership of the participating Societies is 286 members. The questionnaire was made available via the world-wide-web[1] for an eight-week period during May – July 2006. Three specific strategies were adopted to encourage a higher response rate. First, an email was distributed to the membership of each participating Society by a senior office holder who encouraged and endorsed the research. The email also contained the required web link to the questionnaire. Second, the questionnaire was designed for ease of use. Advice was

received from the survey review group and senior office holders as to the way in which the on-line survey should be constructed to encourage higher rates of participation. Third, responses were anonymous thereby encouraging respondents to give honest opinions. Fifty four useable responses were received, providing a response rate of 18.9%. Although the response rate was less than hoped for, it was consistent with other similar studies involving financial analysts as respondents (for example, Graham et al. 2002 and Ho and Wong 2004 had response rates of 17% and 17.2%, respectively). As observed by Smith (2003), response rates of less than 25% are common in accounting research. Non response bias was considered[2] and no significant differences were found. Although this finding implies that those Society members who failed to respond would not necessarily have a different perception to those members that did respond, in view of the low response rate caution is exercised in generalising to the wider population.

As previously referred, three broad research questions underpin this study and provide the prime areas of empirical focus: (1) what measures of performance are considered by financial analysts to be relevant in the current decision making environment? (2) how readily available or accessible[3] are these indicators of firm performance? (3) to what extent is there a critical information gap between a measure's relevance and its accessibility?

The first research question requires respondents to rate, using a 5-point scale, each measure according to its relevance value. Relevance value is a measure of an item's importance and usefulness as an indicator of long term performance and the score could range from '5' (very high relevance value) to '1' (no relevance value). For the second question respondents are required to rate, using a 5-point scale, each measure according to its retrieval capability. Retrieval capability refers to the perceived ease with which the information can be acquired

and the score could range from ‘5’ (very readily available/accessible) to ‘1’ (not readily available/accessible).

Question 3 draws on the participants’ responses to the first two questions. Determining the extent of an information gap between a measure’s relevance value and its retrieval capability could be as simple as taking the linear difference in means. However we consider such an approach problematic in the sense that such a ‘gap’ does not adequately capture the relative importance of the item being scored. That is, in our view, the retrieval capability of information that is scored high in terms of its relevance value should be of greater concern than information that has a lower relevance value score. Accordingly, a weighted method of calculation is employed which amplifies the information gap such that it provides a score reflecting the relative importance (i.e. relevance value) of the item being scored (Foster and Gupta 1994). The weighted information gap is determined in accordance with the following calculation $Gap = (RV_{mean} - RC_{mean}) \times RV_{mean}$, where RV_{mean} is the relevance value mean score and RC_{mean} the retrieval capability mean score of each information item.

The data relating to the relevance value and retrieval capability of each performance measure is ordinal and the non-parametric Friedman’s ANOVA is applied to detect any statistically significant difference between each general category of classification and is followed up, where appropriate, by the Wilcoxon signed-rank test. For the purposes of this study, an observation is considered statistically significant at $p < 0.05$.

4. Research Findings and Discussion

The research findings and discussion are presented in two sections structured around the three broad research questions underpinning the empirical component of this study.

4.1 Relevance Value (RV) and Retrieval Capability (RC)

Financial analysts scored all items included in the base set of performance measures as having some level of importance in the assessment of company performance and value. Table 1 reports the items with the 20 highest and lowest relevance value scores (refer Appendix I for full list of items and their relevance value scores) and Table 2 summarises the average mean score for each of the eight classification categories. Within the scale of 5 (very high relevance) to 1 (no relevance) the scores range from 4.72 (cash flow) to 2.15 (equal employment opportunity). The average score across all items is 3.24.

Insert Table 1 about here

Insert Table 2 about here

As summarised in Table 2, the financial analysts view measures included in the *financial* and *competitive environment* classifications as being especially relevant (classification means of 3.71 and 3.56, respectively). The traditional financial measures of firm performance and value feature strongly in the ranked measures whereby 10 of the 18 *financial* items are located within the top 20 (quarter) of all items and only the 'sales divided by total assets' performance measure with a mean of 3.22 falls short of the average score across all items. The *competitive environment* classification is also strongly represented with five of its 13 measures located within the top 20 and a further four measures have a mean score in excess of the average score across all items.

Items from other classifications included in the top 20 include implied growth rate, capital investment, capacity utilisation, experience / reputation of management, and management / director ownership changes. The inclusion of these items together with the *financial* and *competitive environment* items, reinforce the prime importance to financial analysts of disclosures that are not only concerned with the historic financial performance of companies, but also to the ongoing sustainability of the business.

It is notable that a majority of the additional *financial* and *competitive environment* measures identified by the survey review group for inclusion in the research questionnaire (items in Table 1 and Appendix I denoted by *) are rated highly by the respondents for their relevance value whereby four of the nine additional *financial* measures and two of the three additional *competitive environment* measures are ranked within the top 20 items, and all additional measures ranked above the overall average score.

As a group, measures classified under *human resource management* (mean 2.69) and *social responsibility* (mean 2.51) are perceived as having the least relevance value – indeed, none of these measures individually scored above the average score across all items and, further, all of the *social responsibility* measures and seven of the nine *human resource management* measures are ranked in the lowest 20 items for their relative importance.

The accessibility of desired information varies with the actual mean scores for each item's retrieval capability ranging from 4.33 (interest cover) to 1.98 (percent on-time delivery) with an average score across all items of 2.99 (refer Appendix I). Not surprisingly, and given that financial reporting is a more developed area of reporting than non-financial disclosures, the majority of the items in the top 20 are classified within the *financial* category (15 measures)

giving this category the highest retrieval capability mean score (refer Tables 3 and 4). Four measures from the *process efficiency* category also rank in the top 20 and, notably, are themselves based on financial calculations. Only one measure in the top 20 (dispersion of ownership and management/director ownership changes) has a non-financial characteristic and is located in the *quality/independence of management* category. All performance measures located in the top 20 for their retrieval capability would normally be identifiable or calculable from disclosures made in the financial statements including the Notes to the Financial Statements.

Insert Table 3 about here

Insert Table 4 about here

The 20 lowest ranked items include five of the seven measures classified in the *product quality & customer satisfaction* category and, as summarised in Table 4, indicates that as a group, these measures are perceived to be more difficult to acquire than measures forming other classifications of performance measurement such as, for example, *financial* performance measures.

From a comparison of Tables 2 and 4, and as graphically depicted in Figure 1, performance measures comprising the *financial* category topped the rankings both in terms of their collective relevance value and their retrieval capability. Notably, the two other classifications whose category means exceeded the average score across all items for relevance value (*competitive environment* – mean of 3.56, and *quality/independence of management* – mean of 3.29) have retrieval capability category mean scores (2.81 and 2.97, respectively) that were

below the average retrieval capability score across all items. Arguably, the difference in the rankings of *competitive environment* would in part be due to the more qualitative nature of the measures compared to, for example, *financial* and *process efficiency* measures. At the lower end of the scale, there is little difference in the rankings for relevance value and retrieval capability for *human resource management* and *social responsibility*. However, *product quality & customer satisfaction* has a higher ranking for its relevance value than for its retrieval capability.

The respondents differentiated between the relative importance and the relative accessibility of the eight classifications of measures ($\chi^2(7) = 178.86$, $p = 0.000$ and $\chi^2(7) = 141.46$, $p = 0.000$; respectively). The full series of Wilcoxon test statistics are reported in Appendix II and Appendix III, and it appears that for both relative importance and relative accessibility the eight classifications loosely fall into four 'clusters', although the mix of classifications within each cluster may vary depending on context; that is, whether the classification items are assessed by the respondents according to their relevance value or retrieval capability.

With respect to the relevance value of each classification, no significant difference is identified between the means for *financial* and *competitive environment* and these two classifications comprise the first cluster with the highest relevance value. A significant difference ($p < 0.05$) is found between the means for *quality / independence of management* and all other classifications and this classification will form the second cluster on its own. The third cluster consists of *process efficiency, product & process innovation* and *product quality & customer satisfaction*[4]. No significant difference is detected between the means for *human resource management* and *social responsibility*; however, the means for both of these classifications are significantly different from all other classification means and these two

classifications form the last cluster. In terms of each classification's retrieval capability, the *financial* classification forms the first cluster with its retrieval capability being significantly higher than for other classifications ($p<0.05$). *Process efficiency*, *quality/independence of management* and *competitive environment* form the second cluster[5] and the third cluster consists of *product & process innovation*, *human resource management* and *social responsibility*. With its mean score being the lowest and significantly different from all other classifications *product quality & customer satisfaction* forms the last cluster.

Although the findings from the Wilcoxon tests provide some degree of validity as to the level of relative importance and level of relative retrieval capability attributed by financial analysts to each broad category of classification, the differences in means between each classification's relevance value and its retrieval capability are of notable interest. These differences pose the question as to the existence and extent of any information gap for the various items that are included in the base set of performance measures used in this study. The remainder of this section examines this research issue.

4.2 Information Gap

The calculated individual weighted information gaps range from 8.48 (Barriers to entry) to -3.84 (Accounts receivable divided by sales) (refer Appendix I)[6]. Figure 2 summarises the weighted information gap for each category and highlights the contrasting information gap for the two categories most highly rated for their relevance value (see also Appendix IV). For the *financial* category, there was a relatively small difference (-0.34) between the weighted relevance value score and the corresponding retrieval capability. In contrast, items comprising the *competitive environment* category provide the greatest disparity between the relevance of the measure and the measure's accessibility. Indeed eight of the 13 *competitive environment*

items lie within the top 20 items with the greatest weighted information gap. The magnitude of the *competitive environment* information gap implies that information of importance to financial analysts in the assessment of company performance and value is being under reported.

Insert Figure 2 about here

Although Figure 2 indicates an information gap for each category of performance measure, the magnitude of the average weighted gap mean is somewhat moderated by the category average score comprising individual items that scored 'positive' and 'negative' gaps (refer Appendix I). It is to be noted that in the context of the weighting calculation used, a positive gap denotes a deficiency in the availability of information relative to its perceived usefulness and in the alternative a negative gap identifies a surfeit of information. Further, any information gap identified between a measure's relevance value and retrieval capability score will not necessarily be statistically significant. Adjusting for such moderating effects (i.e. omitting items with a 'negative' gap) and for items where there is no statistical significance in the information gap, brings clearly into focus critical areas of under reporting (see also Appendix V). Table 5 presents the revised list.

Insert Table 5 about here

Notably, precisely half (n = 40) of the total performance measure items (n = 80) in the research instrument are listed in Table 5. It can be observed, with the exception of the items 'cash flow' and 'discounted cash flow analysis', that traditional financial reporting has an appropriate level of informational value to satisfy the expectations of financial analysts;

however, there is an identified need for a more non-traditional type of disclosure, which falls outside of the financial statements as currently regulated. Closer examination of the items listed in Table 5 shows a strong representation of items included in the categories of *product & process innovation* (4 out of 5 category items), *competitive environment* (10 out of 13 items) and *product quality & customer satisfaction* (5 out of 7 items). This finding re-emphasises the increasing importance and reliance placed by financial analysts on non-financial information and information not traditionally reported by managers.

Although full consideration of developments in management reporting is beyond the scope of this study, a cursory review of the items listed in Table 5 suggests a degree of commonality with the more diverse perspective on performance as promoted by the 'balanced scorecard' (Kaplan and Norton 1992). According to Kaplan and Norton, the balanced scorecard includes financial measures that are reflective of actions already taken and non-financial operational measures believed to be the drivers of future financial performance. Many of the items listed would fall within the three non-financial perspectives of a balanced scorecard[7] – customer perspective, internal business process perspective and learning and growth perspective. In a study conducted by Deloitte (2004) senior corporate board members and executives stated a need for incisive information on what they identified as critical or important drivers of their companies' success, including: customer satisfaction, product/service quality, efficiency and effectiveness of business processes, product/service innovation, employee commitment, relationships with external stakeholders, and governance and management processes. Although the survey respondents did not advocate paying less attention to the more traditional financial indicators of success, they nevertheless indicated a strong desire for a more 'balanced' approach to business reporting. What this indicates is that not only is there a strong demand for a broad cross-section of non-financial measures (Ernst and Young 2000), but also

an increasing mutual recognition of the importance of such information for use by both internal management and key external stakeholders.

The finding does, however, raise the issue of the extent and ability to which management can report on such items. For example, some items involve 'perceptions'[8] (e.g. item of ethical behaviour of management), other items fall into the realm of 'commercial sensitivity' (e.g. percent of sales from proprietary products), items such as barriers to entry relate to factors outside of the organisation; however, there are a number of items that could more readily be made available by management (e.g. employee turnover, age of plant and equipment[9]).

Although the underlying premise of this study was that managers will provide a sufficient array of performance-related data to enable informed assessment of firm success, it is not clear whether, and in light of the items listed in Table 5, financial analysts would hold the same expectation. Nevertheless, this finding does highlight the need for firm managers to continually examine and evaluate the level of reporting undertaken. Indeed, and as concluded by PWC (2002), managers need to remain vigilant to ensure that they do not simply underestimate the importance of certain non-financial measures to external stakeholders.

5. Summary and Concluding Comments

Business and financial reporting and disclosure are important means for management to communicate firm performance and governance to external stakeholders. As one group of stakeholders, financial analysts require sufficient disclosure to be able to understand and evaluate changes in the wealth of the company, the quality of reported earnings and other performance metrics, and to make forecasts about the future prospects of the company. The objective of this study was to examine whether an 'information gap' exists between what is

sought and what is provided in respect of financial and non-financial measures financial analysts consider important in their assessment of company performance. The research findings highlight, from a financial analyst perspective, areas of under reporting and disclosure practices.

The empirical results indicate that the traditionally reported financial measures retain a high level of relevance in the assessment of firm performance and the availability of such information suffices. Our study also indicates that a broad range of non-financial information not traditionally reported, is recognised by financial analysts as important data to be used in the prediction of firm performance, however, our results suggest that the availability of some of the items is limited, especially measures pertaining to *product quality & customer satisfaction*, *product & process innovation*, and *competitive environment*.

The finding on the availability of financial measures is not unexpected and is reflective of the legitimating behaviour of firms in compliance with external reporting regulation. However, the importance of meeting the informational demands of specific stakeholder groups is not to be underestimated. As argued by Freeman (1983), management need to identify and understand the importance of meeting stakeholder demand in order to meet the strategic objectives of the firm. That is, key stakeholders such as investors and financiers control the resources that the firm requires to continue operations and, therefore, managing the relationships between the firm and its stakeholders is an important aspect of the strategic plan. The continuing legitimisation of the firm may therefore involve voluntary disclosure to meet specific informational demands. Although the findings of the study provide greater awareness of the array of information items that one stakeholder group considers to be ‘decision useful’ in meeting their particular information needs, we acknowledge that caution should be

exercised in using the generalised results to advocate a definitive list of performance items that all companies should disclose. All companies within and across specific industries and sectors are not alike and management teams may not consider the aspects of their individual businesses to be equally important.

The conclusions of this paper have implications for regulators and managers. Ideally, more extensive disclosure of key performance measures would come about through the interplay of market forces (Dempsey et al. 1997). In the absence of such forces, regulators will need to give due consideration to the appropriateness of extending current external reporting models to include a broader set of 'decision useful' performance measures. However, as each company is unique and where many of the non-financial drivers of firm performance are industry or firm specific, then arguably a one-size-fits-all approach is redundant. Alternatively, by recognising that management are best placed to determine the aspects of their own businesses that are especially important to its success, management should voluntarily identify and disclose the factors that are important to the success of their business and focus their disclosures on those factors.

However, a core issue for both regulators and managers is the balance between the proprietary and other costs of providing a broader range of performance measures (especially those of commercial and strategic importance) and the benefits of additional disclosure to be gained externally. In their report on business reporting (FASB, 2001), the Steering Committee argued that a company should not use competitive harm as the blanket excuse for failing to provide additional voluntary disclosures. Management needed to consider selectively and carefully whether disclosures about, for example, a company's forward-looking strategies and plans, metrics and other information would adversely affect the company by aiding its competitors.

As Hutton, Miller and Skinner (2003) found, managers may already be providing supplementary information (outside of its formal reporting) to accompany their management forecasts, thereby increasing the probability of disclosing proprietary information. Such information included forecasts of future earnings, new contracts, new product lines and segment profitability. Nevertheless, cost-benefit decisions must be made as carefully as possible as there is an argument that enhanced information sharing should increase management credibility, securities analysts' understanding of the firm and investors' confidence, which potentially leads to reduced share price volatility, increased share value, more long-term investment and lower cost of capital (Eccles and Mavrinac 1995; PriceWaterhouseCoopers (PWC) 2002).

6. Limitations and Future Research Opportunity

The major limitation of this study is that the scope of the research is limited and convenience sampling is used, thus limiting the generalisability of the results to a broader financial analyst grouping including non-affiliated financial analysts. Although other Australasian societies were invited to participate this was declined and being able to access an established membership was, in our view, both convenient and efficient. Thus, the research considers the responses only from members of the Chartered Financial Analyst Society of New Zealand and the Chartered Financial Analyst Society of Melbourne. It may be that members of other societies and, in particular, non-affiliated financial analysts have different views on the relevance and accessibility of key performance information. The perceptions of the affiliated respondents in the current studies may have been conditioned by an institutional approach to professional development.

Although, and as outlined earlier in the paper, strategies were adopted in an effort to improve the response rate, respondents had to take deliberate action to not only complete the survey but also to access the on-line questionnaire. This self selection of individuals (i.e. those Society members who had sufficient interest and willingness to participate in the research) may represent a biased portion of the wider financial analyst population; at least we cannot claim they are representative. This research could be extended to include other financial analysts.

The findings of this study provide other opportunities for future research such as, for example, determining the views of managers in regard to the relevance value of the identified performance measures. The findings would identify if managers underestimate the importance of disclosing a broader range of performance measures and may also provide some insight into the current state of difficulty, as identified in the current study, which financial analysts have in acquiring key data. The views of other user groups could also be researched.

Notes

[1] We were unable to gain direct access to the membership and in consultation with key office holders the distribution of the questionnaire via the world-wide-web was identified as the appropriate medium.

[2]The Societies circulated a follow up reminder to their respective memberships and the ten responses received after this reminder notice was issued were used as a surrogate measure for non-response. The Mann-Whitney U test was used to detect the likelihood of non-response bias.

[3] Respondents were not asked to evaluate the timeliness of disclosure. However, when considering the perceived ease with which the information item could be acquired, respondents might have considered timeliness as a factor in their evaluation. This might explain the 'information gap' identified for the Statement of Cash Flows. Although it is to be expected that while the Statement of Cash Flow would be relatively easy to come by (e.g. one of the general purpose financial statements) the timeliness of availability might be an issue for analysts.

[4] It is noted that although a significant difference is detected between the means for *process efficiency* and *product quality & customer satisfaction*, no significant difference is detected sequentially between the three classifications and therefore for the purposes of this paper loosely form the third cluster.

[5] Although a significant difference is detected between the classification means for *process efficiency* and *competitive environment*, sequentially no significant difference is detected between the three classifications. Accordingly, and for the purposes of this paper, the three classifications form a loose cluster.

[6] Theoretically, and using the formula [(RV-RC) x RV], the average weighted gap mean could range from +20 [(5-1) x 5] to -6 [(3-5) x 3].

[7] The fourth perspective is 'financial'.

[8] An associated concern is the validity and reliability of such perceptions.

[9] Although published financial statements would include a depreciation schedule, the disclosure is generalised and often lacks specificity.

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APPENDICES

Appendix I: Performance Measures, Classification and Means (Ranking)

(n = 54)	**Relevance Value Mean**	**Retrieval Capability Mean**	**Weighted Gap**
Financial			
Cash Flow	4.72 (1)	3.78 (15)	4.44
Discounted Cash Flow Analysis*	4.28 (4)	3.37 (24)	3.89
Return on Equity	4.06 (6)	3.85 (13)	0.84
Sales	4.00 (8)	4.13 (5)	-0.52
EBITDA Margin*	3.94 (10)	3.94 (10)	0.00
Net Income / Earnings per share	3.87 (11)	4.19 (4)	-1.24
Price Earnings Ratio*	3.83 (12)	4.09 (6)	-1.00
Return on Assets	3.76 (14)	3.74 (16)	0.08
Return on Sales	3.70 (16)	3.96 (9)	-0.96
EV / EBITDA*	3.69 (18)	3.80 (14)	-0.41
Gearing Numbers / Ratios*	3.57 (22)	4.06 (8)	-1.74
Interest Cover*	3.54 (23)	4.33 (1)	-2.80
Dividend Yield*	3.44 (27)	4.20 (3)	-2.61
Quality of Accounting Policies	3.37 (31)	2.94 (37)	1.43
Capital Expenditure and Comparatives*	3.31 (34)	3.17 (32)	0.49
Equity divided by Total Assets	3.28 (36)	4.09 (7)	-2.66
Normalised Accounting Numbers*	3.26 (37)	3.56 (20)	-0.96
Sales divided by total Assets	3.22 (42)	3.93 (11)	-2.29
Classification Mean	*3.71*	*3.84*	*-0.34*
Product Quality and Customer Satisfaction			
Percent Repeat Sales	3.17 (44)	2.22 (72)	3.03
Service Responsiveness	3.07 (46)	2.00 (78)	3.28
Customer Complaints	3.00 (54)	2.13 (77)	2.61
Litigation – Product Quality	2.91 (58)	2.74 (43)	0.46
Percent On-Time Delivery	2.76 (62)	1.98 (80)	2.15
Customer Surveys	2.65 (70)	2.26 (71)	1.05
Warranty Claims	2.31 (78)	2.43 (60)	-0.28
Classification Mean	*2.83*	*2.25*	*1.77*
Process Efficiency			
Implied Growth Rate*	3.98 (9)	3.31 (27)	2.67
Capital Investment	3.69 (17)	3.41 (23)	1.03
Capacity Utilisation	3.61 (20)	2.61 (52)	3.61
Price Earnings / Growth*	3.61 (21)	3.70 (17)	-0.32
Operating Costs Per Employee	3.43 (28)	3.33 (26)	0.34
Age of Plant and Equipment	3.33 (33)	2.78 (39)	1.83
Defect rates / Yield Rates	3.04 (50)	2.20 (73)	2.54
Product Development Time	3.04 (51)	2.30 (68)	2.25
EV / Sales*	3.02 (53)	3.89 (12)	-2.63
Accounts Receivable divided by Sales	2.93 (56)	4.24 (2)	-3.84
Ability to Customize Products	2.91 (57)	2.48 (58)	1.25
Cost of Goods Sold divided by Inventory	2.74 (63)	3.61 (19)	-2.38
Manufacturing Cycle Time	2.74 (64)	2.39 (63)	0.96
Order to Delivery Time	2.68 (68)	2.30 (69)	1.03
Sales Per Employee	2.67 (69)	3.07 (33)	-1.07
Classification Mean	*3.16*	*3.04*	*0.49*

Product and Process Innovation			
Percent of Products Protected by Patents	3.22 (38)	2.28 (70)	3.09
Research & Development Expenditures	3.07 (47)	3.26 (29)	-0.58
Percent of Sales Due to New Products	3.06 (49)	2.30 (67)	2.33
Number of New Products	3.02 (52)	2.61 (53)	1.24
Number of New Patents	2.83 (60)	2.31 (66)	1.47
Classification Mean	*3.04*	*2.55*	*1.50*
Competitive Environment			
Barriers to Entry*	4.56 (2)	2.70 (46)	8.48
Industry Structure*	4.35 (3)	3.04 (34)	5.70
Potential Competition	4.26 (5)	2.54 (55)	7.33
Market Share	3.81 (13)	2.98 (35)	3.16
Percent of Sales from Proprietary Products	3.70 (15)	2.69 47)	3.74
Forecasted Variables*	3.48 (25)	2.74 (42)	2.58
Strategic Alliances	3.39 (29)	2.91 (38)	1.63
Brand Awareness	3.37 (30)	2.48 (57)	3.00
Customer Diversification	3.30 (35)	2.50 (56)	2.64
Product Diversification	3.22 (41)	3.31 (28)	-0.29
Tariff or Quota Protection	3.11 (45)	2.65 (48)	1.45
Geographic Diversification	3.07 (48)	3.35 (25)	-0.86
Infringement / Anti-Trust Litigation	2.59 (74)	2.63 (50)	-0.10
Classification Mean	*3.56*	*2.81*	*2.96*
Quality / Independence of Management			
Experience / Reputation of Management	4.04 (7)	2.74 (41)	5.25
Management / Director Ownership Changes*	3.63 (19)	3.65 (18)	-0.07
Continuity of Management	3.48 (24)	2.72 (45)	2.64
Ethical Behaviour of Management	3.46 (26)	2.31 (65)	3.98
Management / Director Ownership Levels*	3.37 (32)	3.43 (22)	-0.20
Independence of the Board of Directors	3.22 (39)	3.24 (30)	-0.06
Involvement of the Board of Directors	3.22 (40)	2.43 (59)	2.55
Shareholder disputes	2.87 (59)	2.61 (54)	0.75
Dispersion of Ownership	2.33 (77)	3.56 (21)	-2.87
Classification Mean	*3.29*	*2.97*	*1.33*
Human Resource Management			
Employee Turnover	3.19 (43)	2.15 (75)	3.32
Employee Involvement	2.98 (55)	2.41 (61)	1.70
Employee Training	2.81 (61)	2.35 (64)	1.29
Safety Record	2.72 (66)	2.63 (49)	0.24
Profit Sharing	2.65 (71)	2.76 (40)	-0.29
Labour Market Relations	2.61 (72)	2.15 (76)	1.20
Employee Share Ownership Plans	2.61 (73)	3.19 (31)	-1.51
Absentee Rates	2.46 (75)	2.00 (79)	1.13
Equal Employment Opportunity	2.15 (80)	2.96 (36)	-1.75
Classification Mean	*2.69*	*2.51*	*0.59*
Social Responsibility			
Environmental Performance	2.72 (65)	2.41 (62)	0.85
Litigation – Social Responsibility	2.70 (67)	2.74 (44)	-0.11
Affirmative Action	2.43 (76)	2.19 (74)	0.58
Community Involvement	2.19 (79)	2.63 (51)	-0.98
Classification Mean	*2.51*	*2.49*	*0.09*
Mean All Items	**3.24**	**2.99**	**0.97**

* Denotes additional measures identified by survey review group.

Appendix II: Statistical Differences in Relevance Value Rankings Based on Category Mean Scores

	E	**F**	**C**	**D**	**B**	**G**	**H**
A	$z = 2.138$ $p = 0.057$	$z = 4.147$ $p = 0.000$**	$z = 5.500$ $p = 0.000$**	$z = 5.534$ $p = 0.000$**	$z = 5.850$ $p = 0.000$**	$z = 6.710$ $p = 0.000$**	$z = 6.418$ $p = 0.000$**
E		$z = 2.646$ $p = 0.015$*	$z = 4.526$ $p = 0.000$**	$z = 5.167$ $p = 0.000$**	$z = 5.261$ $p = 0.000$**	$z = 6.326$ $p = 0.000$**	$z = 6.247$ $p = 0.000$**
F			$z = 2.600$ $p = 0.015$*	$z = 3.402$ $p = 0.000$**	$z = 4.419$ $p = 0.000$**	$z = 5.678$ $p = 0.000$**	$z = 5.590$ $p = 0.000$**
C				$z = 1.091$ $p = 0.481$	$z = 2.694$ $p = 0.006$**	$z = 3.944$ $p = 0.000$**	$z = 3.731$ $p = 0.000$**
D					$z = 2.041$ $p = 0.064$	$z = 3.591$ $p = 0.000$**	$z = 3.601$ $p = 0.000$**
B						$z = 2.524$ $p = 0.000$**	$z = 2.982$ $p = 0.004$*
G							$z = 0.632$ $p = 0.754$

Note: * $p < 0.05$ (2-tail); ** $p < 0.01$ (2-tail)

Appendix III: Statistical Differences in Retrieval Capability Rankings Based on Category Mean Scores

	C	F	E	D	G	H	B
A	$z = 6.518$ $p = 0.000$**	$z = 5.963$ $p = 0.000$**	$z = 6.593$ $p = 0.000$**	$z = 5.494$ $p = 0.000$**	$z = 4.763$ $p = 0.000$**	$z = 5.131$ $p = 0.000$**	$z = 5.408$ $p = 0.000$**
C		$z = 1.010$ $p = 0.312$	$z = 3.897$ $p = 0.000$**	$z = 4.945$ $p = 0.000$**	$z = 4.670$ $p = 0.000$**	$z = 4.022$ $p = 0.000$**	$z = 4.219$ $p = 0.000$**
F			$z = 1.714$ $p = 0.085$	$z = 4.201$ $p = 0.000$**	$z = 3.467$ $p = 0.000$**	$z = 2.801$ $p = 0.005$**	$z = 2.299$ $p = 0.000$**
E				$z = 2.687$ $p = 0.007$**	$z = 3.081$ $p = 0.002$**	$z = 2.912$ $p = 0.003$**	$z = 4.396$ $p = 0.000$**
D					$z = 0.589$ $p = 0.561$	$z = 1.374$ $p = 0.169$	$z = 3.674$ $p = 0.000$**
G						$z = 0.560$ $p = 0.576$	$z = 3.714$ $p = 0.000$**
H							$z = 2.970$ $p = 0.003$**

Note: * $p < 0.05$ (2-tail); ** $p < 0.01$ (2-tail)

Appendix IV: Weighted Gap between Relevance Value and Retrieval Capability

Category	Average Weighted Gap Mean	Min.	Max.
E. Competitive environment (n = 13)	2.96	-0.10	8.48
B. Product quality and customer satisfaction (n = 7)	1.77	-0.28	3.28
D. Product and process innovation (n = 5)	1.50	-0.58	3.03
F. Quality / independence of management (n = 9)	1.33	-2.87	5.25
G. Human resource management (n = 9)	0.59	-1.74	3.32
C. Process efficiency (n = 15)	0.49	-3.84	3.61
H. Social responsibility (n = 4)	0.09	-0.96	0.84
A. Financial (n = 18)	-0.34	-2.80	4.44
Aggregate Mean / Median (n = 80)	*0.97 / 0.91*		

Appendix V: Items with a Statistical Difference between Relevance Value and Retrieval Capability (RV > RC) Ranked by Weighted Gap

	RV Mean	RC Mean	z - score	Sig (1-tail)	Weighted Gap
Barriers to Entry	4.56	2.70	6.368*	0.000	8.48
Potential Competition	4.26	2.54	6.111*	0.000	7.33
Industry Structure	4.35	3.04	4.964*	0.000	5.70
Experience / Reputation of Management	4.04	2.74	5.372*	0.000	5.25
Cash Flow	4.72	3.78	4.882*	0.000	4.44
Ethical Behaviour of Management	3.46	2.31	5.002*	0.000	3.98
Discounted Cash Flow Analysis	4.28	3.37	4.382*	0.000	3.89
Percent of Sales from Proprietary Products	3.70	2.69	4.463*	0.000	3.74
Capacity Utilisation	3.61	2.61	5.146*	0.000	3.61
Employee Turnover	3.19	2.15	4.558*	0.000	3.32
Service Responsiveness	3.07	2.00	4.435*	0.000	3.28
Market Share	3.81	2.98	3.795*	0.000	3.16
Percent Repeat Sales	3.22	2.28	4.248*	0.000	3.09
Percent of Products Protected by Patents	3.17	2.22	4.784*	0.000	3.03
Brand Awareness	3.37	2.48	4.696*	0.000	3.00
Implied Growth Rate	3.98	3.31	3.465*	0.000	2.67
Continuity of Management	3.48	2.72	3.379*	0.000	2.64
Customer Diversification	3.30	2.50	4.991*	0.000	2.64
Customer Complaints	3.00	2.13	4.172*	0.000	2.61
Forecasted Variables	3.48	2.74	4.042*	0.000	2.58
Defect rates / Yield Rates	3.22	2.43	3.931*	0.000	2.55
Involvement of the Board of Directors	3.04	2.20	3.638*	0.000	2.54
Percent of Sales Due to New Products	3.06	2.30	4.102*	0.000	2.33
Product Development Time	3.04	2.30	3.951*	0.000	2.25
Percent On-Time Delivery	2.76	1.98	4.125*	0.000	2.15
Age of Plant and Equipment	3.33	2.78	3.108*	0.001	1.83
Employee Involvement	2.98	2.41	2.623*	0.004	1.70
Strategic Alliances	3.39	2.91	2.521*	0.006	1.63
Number of New Patents	2.83	2.31	2.984*	0.001	1.47
Quality of Accounting Policies	3.11	2.65	2.620*	0.004	1.45
Tariff or Quota Protection	3.37	2.94	3.406*	0.000	1.43
Employee Training	2.81	2.35	2.665*	0.003	1.29
Ability to Customize Products	2.91	2.48	3.059*	0.001	1.25
Number of New Products	3.02	2.61	2.379*	0.009	1.24
Labour Market Relations	2.61	2.15	2.712*	0.003	1.20
Absentee Rates	2.46	2.00	2.654*	0.004	1.13
Order to Delivery Time	2.65	2.26	2.395*	0.008	1.05
Customer Surveys	2.68	2.30	2.362*	0.009	1.03
Manufacturing Cycle Time	2.74	2.39	2.298**	0.012	0.96
Environmental Performance	4.06	3.85	2.021**	0.022	0.84

* $p < 0.01$; ** $p < 0.05$

TABLES AND FIGURES

Table 1: Items with the Highest/Lowest Relevance Value Scores

Top 20 (n = 54)	**Relevance Value Mean**	**Lowest 20** (n = 54)	**Relevance Value Mean**
Cash Flow	4.72	Employee Training	2.81
Barriers to Entry*	4.56	Percent On-Time Delivery	2.76
Industry Structure*	4.35	Cost of Goods Sold divided by Inventory	2.74
Discounted Cash Flow Analysis*	4.28	Manufacturing Cycle Time	2.74
Potential Competition	4.26	Environmental Performance	2.72
Return on Equity	4.06	Safety Record	2.72
Experience / Reputation of Management	4.04	Litigation – Social Responsibility	2.70
Sales	4.00	Order to Delivery Time	2.68
Implied Growth Rate*	3.98	Sales Per Employee	2.67
EBITDA Margin*	3.94	Customer Surveys	2.65
Net Income / Earnings per share	3.87	Profit Sharing	2.65
Price Earnings Ratio*	3.83	Labour Market Relations	2.61
Market Share	3.81	Employee Share Ownership Plans	2.61
Return on Assets	3.76	Infringement / Anti-Trust Litigation	2.59
Percent of Sales from Proprietary Products	3.70	Absentee Rates	2.46
Return on Sales	3.70	Affirmative Action	2.43
Capital Investment	3.69	Dispersion of Ownership	2.33
EV / EBITDA*	3.69	Warranty Claims	2.31
Management / Director Ownership Changes*	3.63	Community Involvement	2.19
Capacity Utilisation	3.61	Equal Employment Opportunity	2.15

1 = no relevance value; 5 = very high relevance value

* Denotes additional measures identified by survey review group.

Table 2: Relevance Value of Measures According to Classification Category

Category	**Average Mean (Ranked Order)**	**Std Dev.**
A – Financial (n = 18)	3.71	0.51
E - Competitive environment (n = 13)	3.56	0.53
F - Quality / independence of management (n = 9)	3.29	0.62
C - Process efficiency (n = 15)	3.16	0.65
D - Product and process innovation (n = 5)	3.04	0.69
B - Product quality and customer satisfaction (n = 7)	2.83	0.73
G - Human resource management (n = 9)	2.69	0.65
H - Social responsibility (n = 4)	2.51	0.68
Aggregate Mean / Median (n = 80)	*3.24 / 3.22*	

1 = no relevance value; 5 = very high relevance value

Table 3: Items with the Highest/Lowest Retrieval Capability Scores

Top 20 (n = 54)	**Retrieval Capability Mean**	**Lowest 20** (n = 54)	**Retrieval Capability Mean**
Financial			
Interest Cover*	4.33	Employee Involvement	2.41
Accounts Receivable divided by Sales	4.24	Environmental Performance	2.41
Dividend Yield*	4.20	Manufacturing Cycle Time	2.39
Net Income / Earnings per share	4.19	Employee Training	2.35
Sales	4.13	Ethical Behaviour of Management	2.31
Price Earnings Ratio*	4.09	Number of New Patents	2.31
Equity divided by Total Assets	4.09	Percent of Sales Due to New Products	2.30
Gearing Numbers / Ratios*	4.06		
Return on Sales	3.96	Order to Delivery Time	2.30
EBITDA Margin*	3.94	Percent of Products Protected by Patents	2.28
Sales divided by total Assets	3.93	Customer Surveys	2.26
EV / Sales*	3.89	Percent Repeat Sales	2.22
Return on Equity	3.85	Defect rates / Yield Rates	2.20
EV / EBITDA*	3.80	Affirmative Action	2.19
Cash Flow	3.78	Employee Turnover	2.15
Return on Assets	3.74	Labour Market Relations	2.15
Price Earnings / Growth*	3.70	Customer Complaints	2.13
Management / Director Ownership Changes*	3.65	Service Responsiveness	2.00
Cost of Goods Sold divided by Inventory	3.61	Absentee Rates	2.00
Normalised Accounting Numbers*	3.56	Percent On-Time Delivery	1.98

1 = not readily available/accessible; 5 = very readily available/accessible

* Denotes additional measures identified by survey review group.

Table 4: Retrieval Capability According to Classification Category

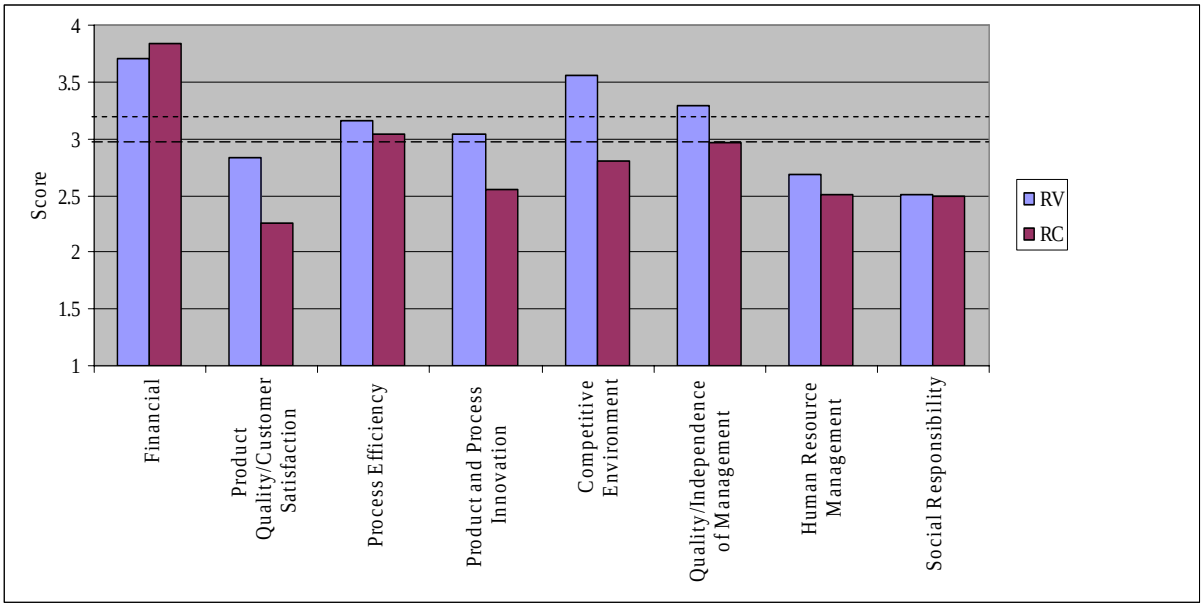
Category	**Average Mean (Ranked Order)**	**Std Dev.**
A – Financial (n = 18)	3.84	0.61
C - Process efficiency (n = 15)	3.04	0.40
F - Quality / independence of management (n = 9)	2.97	0.51
E - Competitive environment (n = 13)	2.81	0.43
D - Product and process innovation (n = 5)	2.55	0.54
G - Human resource management (n = 9)	2.51	0.57
H - Social responsibility (n = 4)	2.49	0.64
B - Product quality and customer satisfaction (n = 7)	2.25	0.61
Aggregate Mean / Median (n = 80)	*2.99 / 2.75*	

1 = not readily available/accessible; 5 = very readily available/accessible

Table 5: Items with a Statistical Difference between Relevance Value and Retrieval Capability (RV > RC)

	RV Mean	RC Mean	Weighted Gap
Financial			
Cash Flow	4.72	3.78	4.44
Discounted Cash Flow Analysis	4.28	3.37	3.89
Quality of Accounting Policies	3.11	2.65	1.45
Product Quality and Customer Satisfaction			
Service Responsiveness	3.07	2.00	3.28
Percent Repeat Sales	3.22	2.28	3.09
Customer Complaints	3.00	2.13	2.61
Percent On-Time Delivery	2.76	1.98	2.15
Customer Surveys	2.68	2.30	1.03
Process Efficiency			
Capacity Utilisation	3.61	2.61	3.61
Implied Growth Rate	3.98	3.31	2.67
Product Development Time	3.04	2.30	2.25
Defect rates / Yield Rates	3.22	2.43	2.55
Age of Plant and Equipment	3.33	2.78	1.83
Ability to Customize Products	2.91	2.48	1.25
Order to Delivery Time	2.65	2.26	1.05
Manufacturing Cycle Time	2.74	2.39	0.96
Product and Process Innovation			
Percent of Products Protected by Patents	3.17	2.22	3.03
Percent of Sales Due to New Products	3.06	2.30	2.33
Number of New Patents	2.83	2.31	1.47
Number of New Products	3.02	2.61	1.24
Competitive Environment			
Barriers to Entry	4.56	2.70	8.48
Potential Competition	4.26	2.54	7.33
Industry Structure	4.35	3.04	5.70
Percent of Sales from Proprietary Products	3.70	2.69	3.74
Market Share	3.81	2.98	3.16
Brand Awareness	3.37	2.48	3.00
Customer Diversification	3.30	2.50	2.64
Forecasted Variables	3.48	2.74	2.58
Strategic Alliances	3.39	2.91	1.63
Tariff or Quota Protection	3.37	2.94	1.43
Quality / Independence of Management			
Experience / Reputation of Management	4.04	2.74	5.25
Ethical Behaviour of Management	3.46	2.31	3.98
Continuity of Management	3.48	2.72	2.64
Involvement of the Board of Directors	3.04	2.20	2.54
Human Resource Management			
Employee Turnover	3.19	2.15	3.32
Employee Involvement	2.98	2.41	1.70
Employee Training	2.81	2.35	1.29
Labour Market Relations	2.61	2.15	1.20
Absentee Rates	2.46	2.00	1.13
Social Responsibility			
Environmental Performance	4.06	3.85	0.84

Figure 1: Relevance Value and Retrieval Capability of Measures



Relevance Value (RV): 1 = no relevance value, 5 = very high relevance value.
Retrieval Capability (RC): 1 = not readily available/accessible, 5 = very readily available/accessible.
- - - - - - - - - RV average score for all items 3.24.
– – – – – – RC average score for all items 2.99

Figure 2: Weighted Gap between Relevance Value and Retrieval Capability